

Claims

WHAT IS CLAIMED IS:

1. An optical fiber connector having a top and bottom, front and back orientation comprising:

a jacketed optical cable comprising a terminating fiber, said cable having molded thereon a locking component comprising at least one locking lug, said locking component being formed from a flexible moldable material; and

an inner housing having a radial cross-section which is generally rectilinear and comprises at least three corners, said inner housing comprising at least a portion which defines an opening for receiving said locking component, said opening being configured such that upon insertion of said locking component therein said locking component is movable in both forward and radial directions relative to said inner housing to position said at least one locking lug in a corner of said inner housing such that said locking component and inner housing are secured to each other in an axial direction.
2. The optical fiber connector of claim 1 wherein said flexible moldable material exhibits a flexural modulus of about 50 to about 1200 Mpa.
3. The optical fiber connector of claim 1 wherein said flexible moldable material exhibits a flexural modulus of about 150 to about 900 Mpa.
4. The optical fiber connector of claim 1 wherein said flexible moldable material exhibits a flexural modulus of about 150 to about 350 Mpa.
5. The optical fiber connector of claim 1 wherein said flexible moldable material has a melting point of about 414°F (212°C) or less.
6. The optical fiber connector of claim 5 wherein said flexible moldable material has a melting point of about 380°F (193°C) or less.
7. The optical fiber connector of claim 1 wherein said flexible moldable material exhibits a tensile strength of about 2 Mpa or greater.
8. The optical fiber connector of claim 7 wherein said flexible moldable material exhibits a tensile strength of about 8 Mpa or greater.

9. The optical fiber connector of claim 1 wherein said flexible moldable material exhibits a yield strength of about 2 Mpa or greater.
10. The optical fiber connector of claim 9 wherein said flexible moldable material exhibits a tensile strength of about 8 Mpa or greater.
11. The optical fiber connector of claim 1 wherein said flexible moldable material exhibits a durometer of about 38 D to about 75 D.
12. The optical fiber connector of claim 11 wherein said flexible moldable material exhibits a durometer of about 45 D to about 65 D.
13. The optical fiber connector of claim 1 wherein said flexible moldable material is selected from the group consisting of thermoplastic elastomers, thermoplastic copolyester elastomers, and polyvinylchlorides.
14. The optical fiber connector of claim 1 wherein said locking component has a generally round radial cross-section shape.
15. The optical fiber connector of claim 1 wherein said locking component comprises from about 2 to about 4 locking lugs.
16. The optical fiber connector of claim 1 wherein said locking component comprises 2 locking lugs.
17. The optical fiber connector of claim 1 wherein said inner housing has a generally square- or rectangular-shaped radial cross-section.
18. The optical fiber connector of claim 1 wherein said inner housing defines from about 2 to about 4 slots, each capable of receiving a locking lug.
19. The optical fiber connector of claim 16 wherein said inner housing defines 2 slots, each capable of receiving a locking lug.
20. The optical fiber connector of claim 1 further comprising a strain relief component.
21. The optical fiber connector of claim 20 wherein said strain relief component is formed of the same flexible material as the locking component.
22. The optical fiber connector of claim 21 wherein said strain relief component and locking component are integrally formed.

23. The optical fiber of connector of claim 1 further comprising a ferrule assembly disposed in the inner housing, said ferrule having at least one passage along an optical axis to receive a fiber.
24. The optical fiber of connector of claim 1 further comprising an outer housing into which said inner housing having a locking component positioned in a corner therein is insertable to prevent radial movement of said locking lug out of said corner.
25. The optical fiber of connector of claim 1 wherein said outer housing has a radial cross-sectional shape that is similar to the radial cross-sectional shape of the inner housing.
26. An optical fiber connector having a top and bottom, front and back orientation comprising:
- a jacketed optical cable comprising a terminating fiber, said optical cable having molded thereon a molded component comprising a locking portion having at least one locking lug and a strain relief portion, said molded component being formed from a thermoplastic copolymer elastomer material which exhibits: a flexural modulus of about 150 to about 350 Mpa; a melting point of about 414°F (212°C) or less; a tensile and yield strength of about 8 Mpa or greater; and a durometer of about 45 D to about 65 D; and
- an inner housing having a radial cross-section which is generally rectilinear and comprises at least three corners, said inner housing comprising at least a portion which defines an opening for receiving said locking component, said opening being configured such that upon insertion of said locking component therein said locking component is movable in both forward and radial directions relative to said inner housing to position said at least one locking lug in a corner of said inner housing such that said locking component and inner housing are secured to each other in an axial direction.
27. The optical fiber connector of claim 26 wherein said at least one locking lug has a lug height that is equal to from about 1.05 times to about 2.5 times the length of a minimum wall thickness of the inner housing.